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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,783	11/14/2001	Steven Gray	9D-HR-19209	8847

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John S. Beulick  
Armstrong Teasdale LLP  
Suite 2600  
One Metropolitan Sq.  
St. Louis, MO 63102

EXAMINER
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RO, BENTSU

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 01/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/993,783	<b>Applicant(s)</b> GRAY ET AL.	
	<b>Examiner</b> Bentsu Ro	<b>Art Unit</b> 2837	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 5-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3,5-9 and 17-52 is/are allowed.
- 6) ☒ Claim(s) 1,2,10,11,15 and 16 is/are rejected.
- 7) ☒ Claim(s) 12-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## FIRST OFFICE ACTION AFTER RCE

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 10, 11, 15, 16 are rejected under 35 U.S.C. 102(b) as being anticipated by **Jamieson et al US Patent No. 5,408,573**.

Claims read onto Jamieson et al teaching as follows:

### The claims:

Claim 1. (Currently amended) A method for controlling speed in a pulse-width modulated motor by a load voltage source,

said method comprising the steps of:

measuring the motor load voltage,

wherein said step of measuring the motor load voltage further comprises utilizing at least one switching element to bypass a resistive element; and

### Jamieson et al teaching:

Fig. 1 teaches an apparatus and a method for controlling the speed of a pulse-width modulated motor;  
the motor is shown at 300;  
the pulse width modulation signal is conducted through the conductor 522;  
the load voltage source is shown at the upper-right corner of Fig. 1 and labeled as "+12VDC";

Fig. 1 shows a motor voltage sensor 530 for measuring the motor load voltage;

Fig. 1 shows a switch 550 to bypass a resistor 552;  
it is noted that the motor voltage is affected by the switching of the switch 550;  
when switch 550 is opened, the motor has a less voltage because the resistor 552 series with the motor and functioned as a voltage divider;  
on the other hand, when switch 550 is closed, the motor has a higher voltage;

setting pulse-width modulation duty cycle based on the measured voltage,

wherein an average of frequencies of the pulse-width modulation duty cycles is a predetermined average pulse-width modulation frequency of the motor.

Claim 2. (Original) A method in accordance with claim 1 wherein said steps are sequentially executed and repeated automatically while the motor is in an on state.

10. (Original) A closed loop motor control system, said system comprising:

a motor;

Fig. 1 also shows a motor control signal generator 520, the motor control signal generator 520 controls the pulse-width modulation duty cycle by providing a pulse signal to the line 522 to control the switching device 550, see column 7, lines 27-29 and 45-47;  
the duty cycle is based on the sensed motor voltage, see column 7, lines 49-52;

this limitation has no functionality at all; this limitation simply states the fact of all pulse width modulation controls because the average frequencies of the pulse width modulation duty cycles is the same as the average pulse width modulation frequency of the motor, namely, the motor is controlled by the average frequency of the pulse width modulation duty cycles, therefore, the motor's pulse width modulation frequency must follow the average frequencies of the pulse width modulation duty cycles.

Fig. 1 shows a microprocessor 410; the microprocessor 410 controls the motor speed by generating a signal to the motor control signal generator 520; it is well known in the art that the microprocessor 410 has programs and the programs are executed sequentially and automatically while the motor is in an on state so that the motor speed can be controlled.

Fig. 1 shows signals feedback from motor voltage sensor 530 and locked rotor sensor 540, thus, it is a closed loop motor control system;

the motor 300;

a power source;

a resistive element electrically coupling said motor to said power source;

at least one switching element electrically coupling said motor to said power source in parallel to said resistive element; and

a processor electrically connected to said switching element,

said processor configured to :

determine a load voltage, and

set a pulse width modulation duty cycle based on the determined voltage.

11. (Original) A closed loop system in accordance with claim 10 wherein said processor further configured to:

determine the load voltage while the motor is in an on state repeatedly automatically; and  
set a pulse width modulation duty cycle based on the determined voltage while the motor is in an on state repeatedly automatically.

the "+12VDC";

Fig. 1 shows a resistor 552;  
the resistor 552 couples the motor 300 to the ground terminal of power source;

Fig. 1 shows a switch 550;  
the switch 550 couples the motor 300 to the ground terminal of the power source, further, the switch 550 also is connected in parallel to the resistor 552;

the processor reads onto the motor voltage sensor 530, the motor control signal generator 520 and the microprocessor 410; wherein, the motor control signal generator 520 is connected to the switch 550;

the motor voltage sensor 530 determines the motor (or load) voltage;

see column 7, lines 49-52 wherein it states  
*"Motor control signal generator 520 adjusts the pulse width of the signal at conductor 522 in accordance with a control signal from motor voltage sensor 530 at conductor 532."*

same reason as that of claim 2.

15. (Original) A system in accordance with claim 10 wherein said power source comprises an unregulated voltage supply.

The +12VDC appears to be an unregulated voltage supply.

16. (Original) A system in accordance with claim 15 wherein said unregulated voltage supply comprises an unregulated DC voltage supply.

The +12VDC appears to be an unregulated DC voltage supply.

3. Claims 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 3, 5-9, 17-52 are allowable.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication should be directed to Bentsu Ro at telephone number 703 308-3656.

January 1, 2004

  
Bentsu Ro  
Primary Examiner